California Monthly Climate Summary
August 2009

Weather Highlights

August 2009 was a warm and dry month for California. According to the Western Region Climate Center's California Climate Tracker, the monthly average temperature was 72.4°F which is 0.5°F higher than the long-term average of 71.9°F. With a statewide average of 0.06 inches, precipitation for August was 22% of the long term average.

August's weather was another mostly typical summer month of hot weather and scattered showers over the mountain regions. The month started with high pressure system that extended across the Southwestern United States leading to above normal temperatures across the state. An unusually strong low pressure system developed off the Central California coast causing below normal temperature readings around the 7th of the month. By the end of that week a high pressure system moved in behind the low restoring warm temperatures to the State. Seasonably warm weather continued into the third week of the month at which time a series of upper level disturbances moved over the state bringing onshore flow, cooler temperatures and some thunderstorm activity over the mountains. The month ended with more high pressure and hot temperatures.

Preliminary records, reported on the National Weather Service Record Event Report, show that statewide there were 95 temperature records tied or broken and 5 precipitation records tied or broken for the month. Of the 95 temperature records, 67 were for new high maximum temperatures. Records were set over 18 days of the month. Of the 5 precipitation records for the month, two were for traces of precipitation. One of these was at Fresno-Yosemite International Airport on August 22 which tied the record set back in 1949. August 7th proved to be a cooler than average day across the state. Sandberg tied a record low temperature of 48°F set back in 1976. Lancaster tied a record low of 52°F last reached in 2005. Palomar Mountain recorded a new record low of 50°F beating 1957's 51°F. In addition to the low minimum temperature records Palomar Mountain set a new low maximum temperature record with a reading of 71°F beating the old record of 72°F set back in 1999. Big Bear Lake also set a new low maximum temperature with a reading of 71°F beating the old record of 72°F set in 1973. While not an official record, Death Valley National Park recorded a high temperature of 102°F which was the lowest high temperature for the park on August 7th since 1926.

For the California Data Exchange Center's (CDEC) network of temperature gages used in this report, 24 stations recorded a minimum temperature below freezing in August while 107 stations reached or exceeded 100°F at least once during the month. Statewide extremes from the CDEC network of temperature gages are shown below. Also shown are the monthly average extremes from the CIMIS network. A table of

regional average minimum, mean, and maximum temperatures from the CDEC and CIMIS networks is also shown.

Precipitation in August was below normal for all regions of the state. For the CDEC precipitation gages for August 2009, the largest amount of precipitation recorded was Bridgeport with 0.98 inches. This is 306% of the average precipitation for this station for August. At the other end of the spectrum, 56 stations recorded no precipitation for the month. For the CIMIS network, Alturas in Modoc County topped the precipitation charts with 0.43 inches for the month and 109 stations recorded no precipitation. Some CIMIS gages may show large precipitation totals if the gages are not covered during irrigation activities so care should be given to review precipitation data used from this network. The 8-Station Index for northern California precipitation recorded 0.17 inches in August with just 3 days showing precipitation. On average, only 0.3 inches of precipitation is recorded for the 8-Station index. Statewide, the average precipitation for August was 52% of the long-term average based on the California Data Exchange Center (CDEC) gages. Precipitation percentages by region from the CDEC gages are shown in a table at the end of this document.

In October 2008, California joined the Community Collaborative Rain, Hail and Snow Network (CoCoRaHS). This group uses citizen volunteers to record rain, hail and snow data. The users enter the data online at the CoCoRaHS web site. The web site provides the opportunity to see spatial detail of rain and snow patterns in participating states. By the end of August 2009, California has had more than 500 volunteers sign up spanning 50 of California's 58 counties. The county with the most volunteers at the end of August is Sonoma with more than 80 volunteers. For the month of August, 6,786 reports were recorded for California. The largest daily rain total for CoCoRaHS-CA in July was in Trinity County with 1.23 inches recorded on 8/6/09. One hail report was received on 8/6/09 in El Dorado County noting pea sized (1/4 inch) hail. To join CoCoRaHS, please visit http://www.cocorahs.org.

Snowpack and Water Supply Conditions

Outlooks for the water year 2009 water supply index categories are dry for both the Sacramento Basin and the San Joaquin Basin. Water supply information for California can be found at http://cdec.water.ca.gov/water_supply.html. A historical listing of water year categories for both basins can be found at http://cdec.water.ca.gov/cgi-progs/iodir/WSIHIST.

Drought Monitor and Seasonal Outlook

For August, the Drought Monitor showed small changes in the depiction of drought in California. The maps for California for July 28, 2009 and August 25, 2009 are shown below. The Drought Monitor maps can be found on the National Drought Mitigation Center's (NDMC) website http://drought.unl.edu/dm/. These maps are largely a reflection of precipitation and soil moisture deficit estimates. As of the August 25th depiction, the entire state of California is depicted in either D0 (abnormally dry), D1 (moderate drought) conditions, or D2 (severe drought) conditions. Maps are updated weekly.

The U.S. Seasonal Drought Outlook for September through November from NOAA depicts California with persisting drought conditions across the state based on climatology. Updates are provided twice per month. Maps and information can be found at http://www.cpc.noaa.gov/products/expert_assessment/seasonal_drought.html.

ENSO Conditions and Long-Range Outlooks

The El Niño/Southern Oscillation (ENSO) is being classified as an El Niño pattern. Equatorial sea surface temperature anomalies for the tropical Pacific for August have been positive with values of 0.9°C in the Niño 3.4. The June through August 3-month running mean of the Ocean Niño Index (ONI) is 0.7 which is the second ONI value above the threshold to qualify for an El Niño event. For conditions to be classified as an El Nino event, five consecutive ONI values need to be above the threshold value of 0.5. Most forecast models have the tropical sea surface temperatures remaining in El Niño conditions through the early part of 2010. More information can be found at the Climate Prediction Center's web site:
http://www.cpc.ncep.noaa.gov/products/analysis_monitoring/enso_advisory/
Updates are posted weekly. The latest three month outlook (September through November) from NOAA indicates above normal temperatures for the whole state with higher confidence for the southeast desert area of California. For precipitation, below normal precipitation is forecast for the northeastern portion of the state with equal chances forecast for the rest of the state. Outlook plots and discussions can be fount at http://www.wrcc.dri.edu/longrang/. General weather information of interest can be found at http://www.noaawatch.gov/. For anomaly information please see http://www.wrcc.dri.edu/anom/cal_anom.html.

Agricultural Data

August saw some crops being harvested while others matured. Winter wheat harvest was near complete by the beginning of the month while alfalfa continued to be cut and baled. Safflower fields were drying in preparation for harvest. Cotton was developing well and rice plants were mostly headed. Nectarines, cling peaches, plums, figs and apricots were all undergoing harvest during August. Prune harvest was also underway in both the Sacramento and San Joaquin Valleys. In the south San Joaquin Valley and Tulare basin summer vegetables continued to be harvested. Nut crops were developing well with preparations underway for almond and walnut harvests. Supplemental feeding of livestock continued in August as range conditions continued to degrade. Milk production was down because of the warm weather and some dairies continued to thin their herds. Fire hazard remained high due to dry conditions and warm temperatures. For further crop information see http://www.nass.usda.gov/index.asp.

Other Climate Summaries

California Climate Tracker (new product of Western Region Climate Center)
Golden Gate Weather Service Climate Summary
NOAA Monthly State of the Climate Report

Statewide Extremes (CDEC)
High Temperature – 121°F (Squaw Peak, Colorado River Desert)
Low Temperature – 20°F (Charlotte Lake, Tulare Basin)
High Precipitation – 0.98 inches (Bridgeport, North Lahontan)
Low Precipitation – 0 inches (56 Stations)

Statewide Extremes (CIMIS)
High Average Maximum Temperature – 108.9^{0}F (Salton Sea East, Imperial County)
Low Average Minimum Temperature – 41.0^{0}F (Alturas, Modoc County)
High Precipitation – 0.43 inches (Alturas, Modoc County)*
Low Precipitation – 0 inches (109 stations)
*Sometimes irrigation water from sprinklers gets counted as precipitation if the gage is not covered.

Statewide Precipitation Statistics

Hydrologic Region	Region Weight	Basin Reporting			Stations Reporting			% of Historic Average	
		Basins	Aug	Oct-Aug	Stations	Aug	Oct-Aug	Aug	Oct-Aug
North Coast	0.27	5	5	4	17	10	9	83.0%	80%
SF Bay	0.03	3	3	3	6	5	5	7.8%	93%
Central Coast	0.06	5	3	2	10	2	2	6.4%	62%
South Coast	0.06	5	5	5	15	11	11	0%	66%
Sacramento River	0.26	10	9	8	43	21	20	55.9%	89%
San Joaquin River	0.12	8	7	7	27	19	18	67.4%	88%
Tulare Lake	0.07	5	5	5	27	23	25	32.1%	80%
North Lahontan	0.04	6	4	6	14	10	9	58.0%	77%
South Lahontan	0.06	5	2	2	14	3	3	32.7%	100%
Colorado River	0.03	2	2	2	6	3	3	1.3%	69%
Statewide Weighted Average	1	54	45	44	179	107	105	52.2%	82%

Statewide Mean Temperature Data by Hydrologic Region (degrees F)

Hydrologic Region	No. Stations	Minimum	Average	Maximum
North Coast	30	40.2	65.6	89.8
SF Bay	19	51.3	68.7	90.4
Central Coast	37	51.0	66.5	86.4
South Coast	58	54.0	73.4	97.2
Sacramento	81	47.6	71.3	95.8
San Joaquin	74	48.0	70.6	92.0
Tulare Lake	15	40.8	64.9	85.2
North Lahontan	9	40.2	65.6	89.8
South Lahontan	21	46.6	69.5	89.5
Colorado River Desert	22	70.4	90.2	108.2
Statewide Weighted Average	366	47.4	69.6	93.3

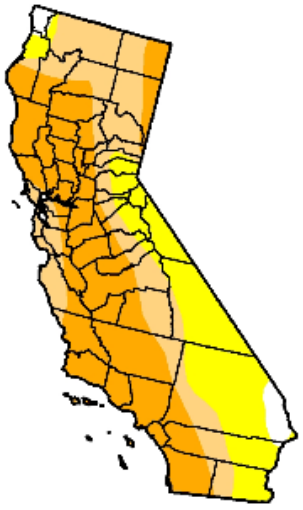
U.S. Drought Monitor

July 28, 2009
Valid 7 a.m. EST

California

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	2.5	97.5	72.8	44.3	0.0	0.0
Last Week (07/21/2009 map)	2.5	97.5	72.8	44.3	0.0	0.0
3 Months Ago (05/05/2009 map)	3.6	96.4	72.1	35.3	0.0	0.0
Start of Calendar Year (01/06/2009 map)	1.7	98.3	88.2	41.3	2.8	0.0
Start of Water Year (10/07/2008 map)	0.0	100.0	95.9	55.0	0.0	0.0
One Year Ago (07/29/2008 map)	0.1	99.9	88.9	38.7	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

http://drought.unl.edu/dm

Released Thursday, July 30, 2009
Author: Mark Svoboda, National Drought Mitigation Center

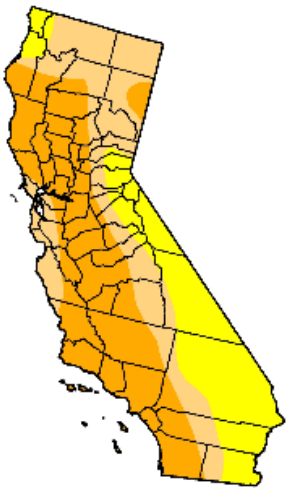
U.S. Drought Monitor

August 25, 2009
Valid 7 a.m. EST

California

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	0.0	100.0	72.8	42.8	0.0	0.0
Last Week (08/18/2009 map)	0.0	100.0	72.8	42.8	0.0	0.0
3 Months Ago (06/02/2009 map)	2.7	97.3	72.3	44.3	0.0	0.0
Start of Calendar Year (01/06/2009 map)	1.7	98.3	88.2	41.3	2.8	0.0
Start of Water Year (10/07/2008 map)	0.0	100.0	95.9	55.0	0.0	0.0
One Year Ago (08/26/2008 map)	0.0	100.0	97.7	43.1	0.0	0.0



Intensity:

- D0 Abnormally Dry
- D1 Drought - Moderate
- D2 Drought - Severe
- D3 Drought - Extreme
- D4 Drought - Exceptional

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements

http://drought.unl.edu/dm

Released Thursday, August 27, 2009
Author: Brad Rippey, U.S. Department of Agriculture